F.M = 75 Mathematics 9th. Roll number.....

All Questions are compulsary

Q1 Choose the correct

1 x 6 = 6

a) The three rational numbers between 3 and 4 are:

a. 5/2, 6/2, 7/2 b. 13/4, 14/4, 15/4

c. 12/7, 13/7, 14/7 d.11/4, 12/4, 13/4

b) $3\sqrt{6} + 4\sqrt{6}$ is equal to:

a. $6\sqrt{6}$ b. $7\sqrt{6}$ c. $4\sqrt{12}$ d. $7\sqrt{12}$

c) A quadrant in which both x and y values are negative is

a. First quadrant b. Second quadrant c. Third quadrant d. Fourth quadrant

d) $3x+10 = 0$ will have:

a. Unique solution b. Two solutions c. Infinitely many solutions d. No solutions

e) If two interior angles on the same side of a transversal intersecting two parallel lines are in the ratio 2 : 3, then the greater of the two angles is:

(a) 54°. (b) 108°. (c) 120°. (d) 136°

f) If one angle of a triangle is equal to the sum of the other two angles, then the triangle is

(a) a right triangle. (b) an isosceles triangle

(c) an equilateral triangle. (d) an obtuse triangle

Q2 True false

[1 x 5 = 5

a. Can we write 0 in the form of p/q?.

b.The things which coincide with one another are equal.

c.Two intersecting lines cannot be parallel to the same line,Is stated in the form of an axiom

d. An exterior angle of a triangle is 80° and the interior opposite angles are in the ratio 1 : 3, measure of interior opposite angles are 30°, 90°

e. The angle of a triangle are in the ratio 5 : 3 : 7, the triangle is an acute-angled triangle.

[1×5=5]

Q3 Fill in the blanks

a. The points (-5, 2) and (2, -5) lie in the .....

b. Mirror image of the point (9, -8) in y-axis is .....

c. The linear equation 3x-11y=10 has:..... solution

d. If one angle of triangle is equal to the sum of the other two, then the triangle is ..... angel.

e. A solid has _____dimensions.

Q4 One word [1×5=5]

a. The shape of the base of a Pyramid is:.....

b. A surface of shape has:.....

c. The line drawn from the center of the circle to any point on its circumference is called.....

d. Equation of a line passing through origin is.....

e. Every rational number is:.....

[1×5=5]

Q5 Match the column

A	B
a. The number of Euclid's Postulates are	i. Any polygon
b. The shape of the base of a Pyramid is:	ii. 3
c. solid has how many dimensions.	iii. 5
d. Radius of point is	iV. 0
e The number of lines that can pass through a given point is	V. Infinite

3 Mark's each. 3x6 = 18

Q 5 Find six rational numbers between 3 and 4.

Or

How will you describe the position of a table lamp on your study table to another person?

Q 6 If a point C lies between two points A and B such that AC = BC, then prove that AC = 1/2 AB, explain by drawing the figure.

A. C. B

Or

Evaluate by use the suitable identities. $(99)^3$.

Q 7 Point C is called a midpoint of a line segment ab prove that every line segment has won and only one midpoint

A. C B. C. D B

Or

Evaluate the product without multiply directly 103 x107

Q 8. if X +Y+Z = 0 show that $X^3 + Y^3 + Z^3 = 3XYZ$

Or

Without actually calculating the cubes find the value of $(-12)^3+(7^3)+(5^3)$

Q 9 find the value of k if x=2 , y=1 is a solution of the equation 2x+3y=k

Or

Express linear equation in the form of a x + by+ c = 0 and indicate the value of a,b&c in 2x + 3y = 9.35 bar

Q 10 Expand $(4a-2b-3c)^2$

Or

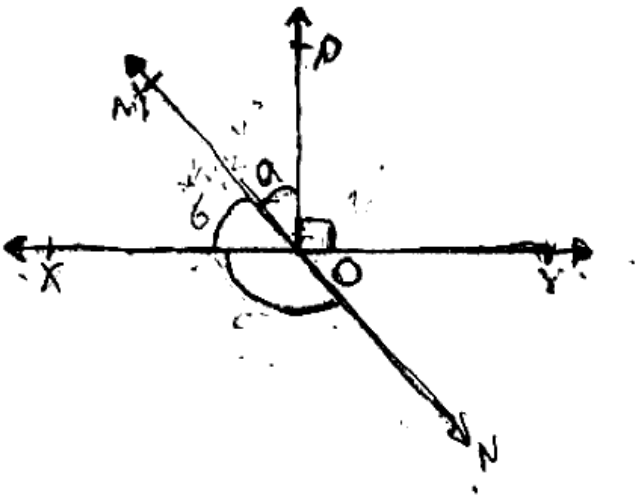
Verify whether 2 and 0 are zeros of the polynomial $x^2 - 2x$.

4 marks 4x4 = 16

Q11 The cost of a notebook is twice the cost of a pen. Write a linear equation in two variables to represent this statement.(Take the cost of a notebook to be Rs. x and that of a pen to be Rs.y)

Or

In figure, lines XY and MN intersect at O. If ∠POY = 90° and a : b = 2 : 3, find c.



Q 12 The following data on the number of girls (to the nearest ten) per thousand boys in different sections of Indian society is given below

Section	Number of girls per thousands boys
Scheduled Caste (SC)	940
Scheduled Tribe (ST)	970
Non SC/ST	920
Backward districts	950
Non-backward districts	920
Rural	930
Urban	910

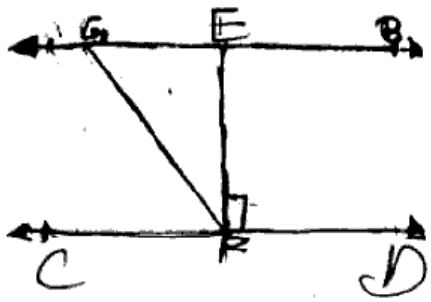
(i) Represent the information above by a bar graph.

(ii) In the classroom discuss, what conclusions can be arrived at from the graph.

Or

Does Euclid's fifth postulate imply the existence of parallel lines ? Explain.

Q13 if AB || CD, EF ⊥ CD and ∠GED = 126°, find ∠AGE, ∠GEF and ∠FGE.



Or

Evaluate using suitable identities. $(999)^3$

Q 14 write the decimal form and say what of decimal expansion has. 36/ 100

Or

Write the decimal form and save water of decimal expansion has 3/13

5 marks each 5x3

Q 15 Factorise. $x^3+13x^2+32x+20$

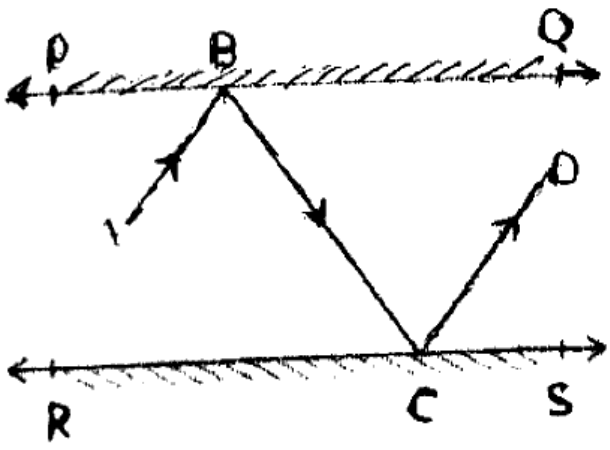
Or

Give a definition of each

I Parallel lines II perpendicular lines. . III line segment

IV radius of a circle. V square

Q 16 PQ and RS are two mirrors placed parallel to each other. An incident ray AB strikes the mirror PQ at B, the reflected ray moves along the path BC and strikes the mirror RS at C and again reflects back along CD. Prove that AB || CD.



Or

Write the answer of each of the following questions:

(i) What is the name of horizontal and the vertical lines drawn to determine the position of any point in the Cartesian plane?

(ii) What is the name of each part of the plane formed by these two lines?

(iii) Write the name of the point where these two lines intersect.

Q 17 See Fig and write the following:

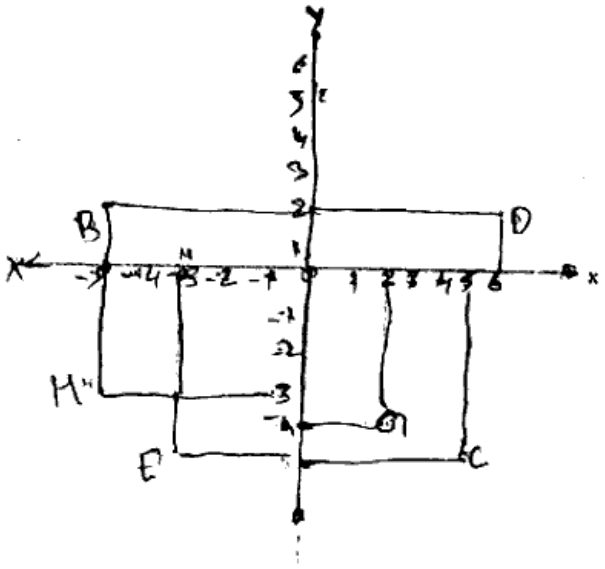
i. The coordinates of B.

ii. The coordinates of C.

iii. The point identified by the coordinates (−3, −5).

iv. The point identified by the coordinates (2, − 4).

v. The abscissa of the point D



Or

What can the maximum number of digits be in the repeating block of digits in the decimal expansion of 1/17? Perform the division to check your answer